INDEX TO VOLUME 70

A

Abothrium crassum, 170
Abundance
  causes of fluctuations, 206-208
  fluctuations, 193-208
  game and coarse fish, 386-390
  yellow perch, 103-107
Academic requirements, fishery biologists, 128-136
Acanthocephala, 165
  Glaridacris catostomi, 163
    Confusus, 163
  Leptorhynchoides thecatus, 162, 166-168, 170
  Neoechinorhynchus cylindratus, 168
    sp., 163, 164
  Pomphorhynchus bulbocolli, 163, 165, 166
Acclimation, speckled trout, 307-403
Acroneuria, 317
  lycorias, 243
Actinobdella triannulata, 163
Agamonema sp., 164, 166, 167, 168, 170
Agapetus sp., 243
Age
  brook trout, 225, 230
  croaker, 478-480
  ling or lawyer, 77-79
  scale study method, 98-101
  steelhead trout, 215-217
  yellow perch, 102-122
Agriculture, Department of, 73
Alabama, legislation, 28
Alabama Polytechnic Institute, 138-140
Alewife, 299
Algae
  Anabaena, 350
  Aphanocapsa, 350
  Ceratophyllum, 225
    demersum, 195
  Chara, 225
  Dinobryon, 350
  Potamogeton, 225
    amplifolius, 194-195
    compressus, 194-195
  Spirogyra, 359
  Staurastrum, 350
  Vallisneria spiralis, 194
Algonquin Park, 236-248
  Laboratory, 140
  lakes, 391-396
    parasites of fish, 161-171
    smallmouth black bass, 172-179
Allocreadium ictaluri, 166
  lobatum, 164
Alloglossidium corti, 166
  geminus, 166
Alloperla imbecilla, 243
Ambloplites rupestris, 82-85, 143-148, 385, 387-390, 422-424
American eagle, 29
American Museum of Natural History, 141
Ameiuridae
  Ameiurus n. natalis, 195, 203-206
    nebulosus, 166-167, 352-354, 393-394
    n. nebulosus, 195, 203-206, 422-424
    sp., 385, 387-390
Amikeus Lake
  parasites of fish, 161-171
Ammonium sulphate, 336
Ammophos, 365
Amphibia, 315, 317, 326-327
Amphipoda, 359
Anabaena, 350
Ancylus, 321-322
Anesthesia
  cresol, 273-274
  ether, 272-274
Angling, 70-71
  catch per hour, 455-458
  creel census, 214-215, 225-229, 251-258, 446-468
  management of waters, 18-20
  rainbow trout catches, 417-418
Anguillidae
  Anguilla bostoniensis, 167, 394
    rostrata, 352-353
Anisoptera, 320, 352
Aphanocapsa, 350
Aplodinotus grunniens, 358, 469-474
Apparatus
  for capturing aquatic insects, 237
  scale projector, 98-101
  trout hatchery, 430-435
Aquatic insects (see insect orders)
Aquiculture, education for, 129-136
Arthropoda (see Crustacea and insect orders)
Artificial propagation (see propagation)
Asterionella formosa, 224
Atherinidae
  Labidesthes s. sicculus, 198
Atherix, 321
Athripsodes angustus, 243
  dilutus, 243
Au Sable River, results of stocking, 450-461
Azygia angusticauda, 167, 168, 170
  longa, 167

B

Bacteria, ulcer disease, 379-380
Baetinae, 314
  Baetis, 314-333
    cingulatis, 243
    flavistriga, 243, 245
    parvus, 243
    pluto, 243
    pygmaeus, 243
Baetisca laurentina, 243
Bait, for bluegills, 199
  for bullheads, 203
Bangham, Ralph V., 161-171
Barkley Pollution Bill, 29, 37-38, 48
Bass, Kentucky, 184
  largemouth black, 335
    capture in seines, 384, 387-390
    feeding habits, 198, 202
    fluctuations, 195-199
    growing season, 183-187
    killed by rotenone, 82-85
  rock, 422-424
    capture in seines, 385, 387-390
    growth rate, 143-148
    killed by rotenone, 82-85
  smallmouth black, 195, 352-353, 422-424
    availability, 172-179
    capture in seines, 384, 387-390
    effect of vacuum, 469-474
    feeding habits, 311-334
    growing season, 183-187
    parasites of, 168-169
    relation size to density, 172-174
    removal by electricity, 406-407
  striped, capture in seines, 384, 387-390

Bass, John F., (In Memoriam), 51
Bass Lake, removal of coarse fish, 382-390
Battle Creek, chinook salmon, 55-69
Bay (see under proper name)
Bear River Migratory Bird Refuge, 29
Beaver dam, effect on trout stream, 236-248
Beckman, William C., 143-148
Beetles, 320, 322
Benacus griseus, 423
Berosus, 321
Berry Lake, use of rotenone, 81-86
Big Spring Creek, condition, rainbow trout, 284-287
Big Trout Lake, fish migration, 391-396
Biological Survey, Bureau of, consolidation, 70
Birge, Edward A., (resolution), 48-49
Blasturus sp., 243
Bluegill, 147
  capture in seines, 385, 387-390
  effect of vacuum, 470-471
  fluctuations, 199-203
  growth, fertilized ponds, 335-338
Bodo necator, 441
Body-scale relationship, 108-110
Bonham, Kelshaw, 356-362
Bonnet, Luis C., 95-97
Booth Lake, 172-179
Bosmina sp., 350-351, 423, 425-426
Boston Fish Pier, sales, 89-94
Bothriocephalus claviceps, 167, 168
  sp., 166, 167, 170
Bottom fauna, 320-332
Brachycentrus, 321, 330
Brachycercus sp., 243
Brett, J. R., 397-403
Brewer Lake, parasites of fish, 161-171
Bucephalus elegans, 167
Buck Bill, 29, 47
Buffalo fish, removal, 384-387
Bulcke, Germain, (telegram from), 25
Bullhead
  brown, 352-354, 422-424
    fluctuations, 195, 2-3-206
    parasites of, 166-167
    migration, 393-394
  yellow
    fluctuations, 195, 203-206
Bunodera sacculata, 167, 170
Burbot, age and growth, 77-79
  migration, 394-395
  parasites of, 170
Burns Creek, 213
Burt Lake, results of stocking, 462-465
Business, order of, 493
Butler, George E., 180-182
By-laws and constitution, 490-493
By-products of fisheries, 72-73

C

Cacapon River, food of smallmouth bass, 311-334
Cache Lake, 174-179
Caddisflies, 231, 317, 321-322
Caenis, 320, 322
California Division of Fish and Game, 56
California, University of, 138-142
Callinectes sapidus, 74
Calomel, 271
Canada Creek, results of stocking, 453-461
Cancer magister, 74
  irroratus, 74
Canning of fish, 72-76
Cambarus, 315, 317, 320, 322
Cannibalism, 426
Canisbay Lake, 172-179
Canoe Lake, 172-179
Capillaria sp., 166, 168
Carp, 195
  effect of vacuum, 472
  removal, 384-387
Carpiodes sp., 384-387
Cascadilla Creek, 408
Cassell, E. V., (In Memoriam), 51
Catarrhal enteritis, 297-303
  treatment, 300-302
Catch, per hour, 455-458
  per unit effort, 105-107, 176-178
Catostomidae
  Carpiodes sp., 384-387
  Catostomus catostomus, 163
    commersonnii, 144, 163, 352-354, 384-387, 393-394
    c. commersonnii, 82-85, 422-424
    teres, 164
  Ictiobus sp., 358, 384-387
  Megastomatobus sp., 384-387
  Minytrema melanops, 384-387
  Moxostoma congestum, 360
Census
  creel, 214-215, 225-229, 251-258, 446-468
  electrical method, 404-409
Central Valley Project, 55-69
Centrarchidae
  Ambloplites rupestris, 82-85, 143-148, 385, 387-390, 422-424
  Chaenobryttus gulosus, 359
  Huro salmoides, 82-85, 183-187, 195-199, 384, 387-390
  Lepomis gibbosus, 82-85, 147, 169-170, 352-353, 385, 387-390, 394, 422-424
    macrochirus, 147, 199-203, 335-338, 385, 387-390, 470-471
  Micropterus dolomieu, 168-169, 172-179, 183-187, 195, 331-334, 352-353, 384, 387-390, 406-407
    punctulatus, 184
    salmoides, 335, 469-474
  Pomoxis annularis, 183, 335-336, 360
    nigro-maculatus, 195, 335-336
    sparoides, 384, 387-390
    sp., 469-474
Centroptilum convexum, 243
  semirufum, 243
  simile, 243
Ceratophyllum, 225
  demersum, 195
Ceriodaphnia, 350-351
Certificate of incorporation, 489
Cestoda
  Abothrium crassum, 170
  Bothriocephalus claviceps, 167
    sp., 166-168, 170
  Corallobothrium fimbriatum, 166
  Diphyllobothrium latum, 483
  Ligula intestinalis, 165-166
  Octobothrium sagittatum, 164
    sp., 166
  Proteocephalus ambloplitis, 166-169
    fluviatilis, 168
    laruei, 162
    macrocephalus, 167
    pearsei, 167, 168
    sp., 163
  Triaenophorus robustus, 483
Chaenobryttus gulosus, 359
Chaoborus, 351-352, 359
Chara, 225, 390, 411
Chesapeake Bay, croaker, 475-482
Chesapeake Biological Laboratory, 140, 475

Chemical treatment, control of weeds, 367
Chemico-physical data
Maligne Lake, 223-224
Potter's Lake, 348-349
Chelydra serpentina, 205, 423-424
Cheumatopsyche pettiti, 243
Chilodon, 299
Chimarrha aterrima, 243, 245
Chironomidae, 230-231, 321-322, 324-332, 352
Chloeon minor, 243
rubropictum, 243
triangulifer, 243, 245, 246
Choroterpes basalis, 243
Chrosomus eos, 165
erythrogaster, 144
Chrysemys bellii marginata, 205
marginata, 423-424
Chub, 354
creek, 82-85
northern creek, parasites of, 164
Utah, 81
Chute, Walter H., 32-34
Chydorus, 350-351
Cisco, 395
growing season, 183-184
parasites of, 162
Cladocera, 351
Cleveland, W. B., (In Memoriam), 51
Clinostomum marginatum, 163-169
Clupeidae
Clupea pallasii, 98
Pomolobus pseudoharengus, 299
Coarse fish removal
by poison, 80-86
by nets, 382-390
Cod, 79
Condition, coefficient of
brook trout, 282-289
method of calculation, 283
rainbow trout, 282-289
yellow perch, 117-121
Coleoptera
Berosus, 321
Dineutes, 320, 322
Dytiscus sp., 423
Gyrinidae, 317
Gyrinus, 320, 322
Helichus, 320
Psephenus, 320, 322
Collection, electrical method, 404-409
Colorado, legislation, 29
University of, 138-142
Commercial fisheries, 70-71
Committees
American Fish Policy, 34
appointment of, 40-41
Auditing, report, 44-45
duties of, 492-493
Executive, minutes, 22
Fishery Advisory, 70-71
Foreign Relations, 47
International Relations, 47
report, 30-32
membership of, 4-5
Common and Scientific Names of Fishes, report, 32-34
National Resources, 38-39,
Nominations, report, 49-50
Pollution Study, report, 37-39
Publications, report, 34-36
Resolutions, report, 46-49
Standing, reports, 30-36
Condition factor (see coefficient of condition)
Constitution and by-laws, 490-493
Contracaecum brachyurum, 168, 170
Conversion factors, lengths, 283-284
Cooperative marketing associations, 188-192
Copepoda, 351, 359
Copper sulphate, fish poison, 81
ineffective for ulcer disease, 380
Corallobothrium fimbriatum, 166
Coregonidae, 483
Coregonus clupeaformis, 162, 180-182, 393-395
Leucichthys artedi, 162, 183-184, 395
Prosopium quadrilaterale, 162
Corixidae, 317, 326-330
Cornell University, 138-142
Costello Lake, parasites of fish, 161-171
yellow perch, 436-440
Costia necatrix
identification and treatment, 444-445
notes and illustrations, 441-445
Costiasis, 444-445
Cottidae
Cottus sp., 412
Couesius plumbeus, 234, 354
Covariance, analysis of, 417-418
Crabs, 74-75
Craneflies, 317, 321-322
Crappie, 335-336
capture in seines, 384, 387-390
effect of vacuum, 469-474
black, 195
white, 183
Crayfish, 315, 317, 320, 322
Creel census, 172-174
brook trout, 225-229, 251-258
Michigan waters, 446-468
Crepidostomum cooperi, 162, 167, 169
cornutum, 166, 168, 170
faronis, 162
ictaluri, 166
Cresol, anesthesia, 273-274
concentrations used, 305-306
effect, brook trout, 304-310
toxicity, 307-310
Cristivomer namaycush, 77, 82-85, 172-174, 393-396
Croaker, distribution, sexual development, 475-482
Crump, S. Lee, 304-310
Crustacea
Amphipoda, 359
Bosmina, 350-351, 423, 425-426
Cambarus, 315, 317, 320, 322
Callinectes sapidus, 74
Cancer irroratus, 74
magister, 74
Ceriodaphnia, 350-351
Chydorus, 350-351
Copepoda, 359
Cyclops, 315, 324-332, 350-351
viridis, 224
Daphnia, 350-351, 438
pulex, 180-182, 224
Diaphanosoma, 350-351
Diaptomus, 350-351
tenuicaudatus, 224
Epischura, 350-351
Ergasilus caeruleus, 162, 163, 170
Holopedium, 350-351, 437-438
Hyalella knickerbockeri, 352
Leptodora, 350-351, 438
Ovalipes ocellatus, 74
Palaemonetes, 359
Polyphemus, 350-351, 423
pediculus, 423, 425
Simocephalus, 327-329
Curing of fish, 72-76
Currents, limiting factor for insects, 243
relation to croaker distribution, 481

Cyprinidae, 234
Cyprinus carpio, 61, 195, 384-387, 472
Chrosomus eos, 165
erythrogaster, 144
Couesius plumbeus, 354
Fundulus diaphanus, 354
Gila atraria, 81
Hybognathus hankinsoni, 166
Hyborhynchus notatus, 82-85, 144, 166, 313-317, 422
Leucosomus corporalis, 313, 317, 393-394
Margariscus margarita nachtriebi, 164
Mylopharodon conocephalus, 61
Notemigonus crysoleucas, 165, 359, 470-471
crysoleucas auratus, 82-85, 144, 422
Notropis amoenus, 313, 315
cornutus, 165-166
heterodon, 422-423
h. heterolepis, 144, 165, 423
hudsonius, 313
lutrensis, 359
rubellus, 313
Pfrille neogaea, 144, 164
Ptychocheilus grandis, 61
Rhinichthys atratulus, 313-314
Semotilus atromaculatus, 82-85, 164
Cyprinodontidae
Fundulus diaphanus menona, 82-85
Cyclops, 315, 324-332, 350-351
viridis, 224

D

Dace, black-nosed, 313-314
fine-scaled, 144
parasites of, 164
northern, parasites of, 164
red-bellied, 144
parasites of, 165
Dam (see under proper name)
Damselflies, 317, 320
Darter, Iowa, 82-85, 144
Daphnia, 350-351
pulex, 180-182, 224
Davis, H. S., 264-271
Deason, H. J., 128-142; (disc.), 36, 49-50
Denmead, Talbott, 37-39
Dennys River, 123
Density of population, 172-179
Derris, 143-144
as fish poison, 80-86
effect, 350-354
method of application, 82-85, 349-350
solubility, 352
Dianthera americana, 313
Diaphanosoma, 350-351
Diaptomus, 350-351
tenuicaudatus, 224
Diatomaceae
Asterionella formosa, 224
Stephanodiscus niagarae, 224
Dichelyne cotylophora, 166-167
Diet, relation to ulcer disease, 369-372
Dineutes, 320, 322
Dinobryon, 350
Diphyllobothrium latum, 483
Diptera, 317
Atherix, 321
Chaoborus, 351-352, 359
Chironomidae, 321-332, 352
Eriocera, 321-322
Simulium, 321-322
Disbursements, 23-24
Disease, costiasis, 444-445
fungus, 264-271
ulcer, 369-381
Distribution, croaker, 475-482
Dixon Lake, parasites of fish, 161-171
Donaldson, Lauren R., 339-346
Dorosomidae
Dorosoma cepedianum, 195, 359, 330, 469-474
Douglas Lake Laboratory, 140
Dragonflies, 317, 320
Drum, effect of vacuum, 469-474
Duke University, 138-142
Dytiscus sp., 423

E

Eagle, American, 29
East Koy Creek, 408
Eel, 352-353, 358
migration, 394
parasites of, 167
Effective food grade, 324-332
determination of, 313-316
Efficiency
seines, 385-386
factor, food utilization, 342
Egg count, 276-277
chinook salmon, 63-65
Electric shock, 81
Electrical census method, 404-409
categories of streams, 404-405
cost of operation, 406
Elliptio, 321-322
Elophila, 317, 321-322
Elson, Paul F., 421-429
Embody, Daniel R., 304-310
Enteritis, catarrhal, 297-303
treatment, 300-302
Entosphenus lamottenii, 82-85
Epeorus humeralis, 243
Ephemeroptera, 241-246
Baetis, 314-333
cingulatis, 243
flavistriga, 243, 245
laurentina, 243
parvus, 243
pluto, 243
pygmaeus, 243
Blasturus, sp., 243
Brachycercus sp., 243
Caenis, 320, 322
Centroptilum convexum, 243
semirufum, 243
simile, 243
Chloeon minor, 243
rubropictum, 243
triangulifer, 243, 245, 246
Choroterpes basalis, 243
Epeorus humeralis, 243
Ephemera, 315, 317, 320, 322, 331-332
Ephemerella, 317, 320, 322
bicolor, 243
invaria, 243
subvaria, 243
Ephemeridae, 352
Ephoron, 326-327
Habrophlebia vibrans, 243
Heptagenia, 314-333
hebe, 243
pulla, 243
Hexagenia, 315, 317, 320, 322
Isonychia, 315, 317, 320, 322, 328-332

Leptophlebia deblis, 243
guttata, 243
mollis, 243
rolitans, 243
Potamanthus, 315, 317, 320, 322, 326, 327
Pseudochloeon carolina, 243
Siphlonurus alternatus, 243
Stenonema canadense, 243, 245
fuscum, 243
rubromaculatum, 243
vicarium, 243
Tricorythus, 320, 322
Ephoron, 326-327
Epischura, 350-351
Equipment, trout hatchery, 430-435
Ergasilus caeruleus, 162, 163, 170
Eriocera, 321-322
Esocidae
Esox lucius, 195
m. masquinongy, 421-429
niger, 352-353
Etheostomidae
Poecilichthys exilis, 82-85, 144
Ether anesthesia, 272-274
Eucalia inconstans, 82-85
Eustrongylides sp., 163

F

Facilities, educational, 128-142
Fallfish, 313, 317
migration, 393-394
Fasting
computation, weight loss, 293
effect, rainbow trout, 290-296
Fecundity, chinook salmon, 63-65
Federal aid in wildlife restoration, 47
Feeding
artificial, whitefish fry, 180-182
experiments, sockeye salmon, 339-346
habits
brook trout, 230-231
gars of Texas, 356-362
maskinonge, 425-427
yellow perch, 436-440
Fellers, Carl R., 72-76; (disc.), 42
Fertilizers
control weeds, 364-367
effect on growth, 335-338
ponds, 336-337
Field Museum of Natural History, 141
Fiedler, R. H., (disc.), 43, 97, 192
Fin rot, 379-380
Fingerlings, loss in weight, 290-296
Fish, Frederic F., 441-445
Fish and Wildlife Service, 47, 56, 73, 87, 96, 126, 128
creation of, 70, 340
Fisheries
Boston sales, 89-94
Bureau of, consolidation, 70, 340
Puerto Rico, 95-97
Fishes (see common and scientific names)
Fishery Advisory Committee, 70-71
Fishery, biology, education for, 128-136
market news, 87-94
products, refrigeration, 260-263
Fishing rate, 176-179
Fitzek Lake, use of rotenone, 81-86
Flies, bulldog, 182
Florida, University of, 138-142
Fluctuations
abundance of fish, 193-208
causes of, 206-208
temperature, 392-393
Fluke, 165
Food, and Drug Administration, 74
grade, effective, 324-332
determination of, 313-316
technology, 72-76
utilization, 339-346
Forage ratio, 313-316
Formalin treatment, 445
Fortsville Brook, 408
Foster, Fred J., 339-346
Freese, J. W., 304-310
Friday Harbor Laboratory, 140
Fundulus diaphanus, 354
diaphanus menona, 82-85
dispar, 359
Fungus disease, rainbow trout, 264-271
Fur seal industry, 30

G

Gadidae
Gadus callarias, 79
Lota lota maculosa, 77-79, 394-395
maculosa, 170
Galeariry Lake, parasites of fish, 161-171
Gambusia affinis, 359-360
Gar, feeding habits, 356-362
removal, 384-387
alligator, feeding habits, 358
long-nosed, 195
effect of vacuum, 472
feeding habits, 360
spotted, feeding habits, 359
Gaspereau, 299
Gasterosteidae
Eucalia inconstans, 82-85
Gastropoda, 352
Genesee River, 406-407
George Washington National Forest
brook trout, 288-289
rainbow trout, 288-289
Georgia, legislation, 29
Gerridae, 317, 330
Gila atraria, 81
Glaridacris catostomi, 163
confusus, 163
Glochidia, 167
Glen Major Ponds, 411-413
Goera stylata, 243
Gottschalk, John, 382-390
Gordon, Seth, 21-25; (disc.), 33-34. 41-42. 219
Grading fishery products, 189-190
Graptemys geographica, 205
Great Britain, 30-31
Greeley, John R., (disc.), 44, 220
Great Mountain National Park, 29
Green River, steelhead trout, 209-220
Greenbank, John, 80-86; (disc.), 43, 355
Grey, Zane, (In Memoriam), 51
Griffiths, Francis P., 272-274, 275-281
Growing season, black basses, 183-187
white crappie, 183
Growth, bluegills in fertilized ponds, 335-338
brook trout, 225, 230
change of rate, 145-148
croaker, 478-480
effect of temperature, 339-346
ling or lawyer, 77-79
maskinonge fry, 427-429
method of calculation, 108-110, 144-145
scale study method, 98-101
steelhead trout, 215-217
yellow perch, 102-122, 436-440
Guests at meeting, 16-17

Gulf of Mexico, fisheries, 31
Gutermuth, C. R., (disc.), 44-45
Gyrinidae, 317
Gyrinus, 320, 322
Gyrodactylidae, 163-169

H

Habrophlebia vibrans, 243
Haddock, landings and sales, 91-93
  percentage of scrod, 94
Halibut fishery, 30
Hanson, Harry A., 55-69
Haplonema hammulatum, 170
Harkness, William J. K., 410-413; (disc.), 247
Harrison, Roger W., 260-263
Hart, J. S., 172-179
Harvard University, 138-142
Haskell, David C., 149-160, 404-409
Hastoperla brevis, 243
Hatchery tanks, circular, 430-435
Hazard, Albert S., 446-468
Helichus, 320
Hemiptera
  Benacus griseus, 423
  Corixidae, 317, 326-330
  Gerridae, 317
  Ranatra sp., 423
  Sponson bugs, 315, 324-325
  Trepobates, 330
Hemlock Lake, stocking results, 461-463
Hepaticola bakeri, 163, 170
Heptagenia, 314-333
  hebe, 243
  pulla, 243
Heptageniidae, 314
Herring, lake, (see also cisco), 484
  Pacific, scale study method, 98-101
Herrington, William C., 123-127; (disc.), 192
Hexagenia, 315, 317, 320, 322
Hile, Ralph, 102-122
Hirudinea, 352
  Actinobdella triannulata, 163
  Illinobdella sp., 167
Hoffmann, Henry J., 483-485
Hoffmaster, P. J. (disc.), 45-46
Hogan, Joe, 469-474
Holopedium, 350-351, 437-438
Hopkins Marine Station, 140
Horst, Louis, (In Memoriam), 51
Hunter, R. P., (disc.), 46-49
Huntington Wildlife Station, 140
Huntsman, A. G., 30-32; (disc.), 42, 127, 219, 258-259, 396, 440
Huro salmoides, 82-85, 183-187, 195-199, 384, 387-390
Hyalella knickerbockeri, 352
Hybognathus hankinsoni, 166
Hyborhynchus notatus, 82-85, 144, 166, 313-317, 422
Hydracarina, 352
Hydropsyche, 321-322
  bettini, 243
  sparna, 243

I

Ichthyology, education for, 129-136
Ictiobus sp., 358, 384-387
Idaho, legislation, 28
Illinobdella sp., 167
Illinois, University of, 138-142
Indiana, legislation, 28
  University, 138-142
Insect fauna, effects of beaver dam
Insects (see under orders)
Inspection of fish, 483-485
Instructions for preparing manuscripts, 512-515
Interior, Department of the, 70, 73, 96
International
  Board of Inquiry for the Great Lakes Fisheries, 31
  Fisheries Commission, 30
  Joint Commission, 31
  Missisquoi Bay-Lake Champlain Commission, 31
  Pacific Salmon Fisheries Commission, 30-31
  relations, 30-32
Intestinal catarrh, 301
Iowa State College, 138-142
Iowa, State University of, 138-142
Iron Canyon Dam, 69
Isonychia, 315, 317, 320, 322, 328-332
Isoperla montana, 243
  sp., 243, 245
  truncata, 243
Itasca State Park Laboratory, 140

J

James, M. C., 26-28
Jarvis, Willard, 275-281
Jasper National Park, brook trout, 221-235
Jobes, Frank W., 102-122
Jones, Alden M., 183-187
Juan de Fuca, Straits of, 215

K

Kansas, University of, 138-142
Kawartha Lakes, 422
Kennedy, W. A., 391-396
Kentucky, University of, 138-142
Keswick Afterbay Dam, salmon, 57-69
Killifish, 354
  barred, killed by rotenone, 82-85
Kinne Creek, marking experiments, 459
Klak, George E., 282-289
Klatskanine River, 215

L

Lake (see under proper name)
Lawyer, age and growth, 77-79
Lamprey, brook, killed by rotenone, 82-85
Lagler, Karl F., (disc.), 42
Langlois, T. H., 18-20; (disc.), 39-40, 41-44
Labidesthes s. sicculus, 198
Lazar, Estelle C., 264-271
Lawrence, W. M., 290-296
Langford, R. R., 436-440
Lake artificial, planting brook trout, 410-411
Lake of the Woods, 484
Ledum, 422
Leeches (see Hirudinea)
Legislation, 28-29
Lengths, annual fluctuations
  conversion of, 116-117, 283-284
  yearling rainbow trout, 417
Length-weight relationship
  rainbow trout, 418-419
  yellow perch, 117-121
Lepibema chrysops, 384, 387-390
Lepidoptera
  Elophila, 317, 321-322

Lepidostoma sp., 243
Lepisosteidae
Lepisosteus platystomus, 357
Lepisosteus osseus, 195, 357-361, 384-387, 472
platostomus, 357-361, 384-387
spatula, 357
Lepomis gibbosus, 82-85, 147, 169-170, 352-353, 385, 387-390, 394, 422-424
macrochirus, 147, 199-203, 335-338, 385, 387-390, 470-471
Leptodora, 350-351, 438
Leptophlebia debilis, 243
guttata, 243
mollis, 243
volitans, 243
Leptorhynchoides thecatus, 162, 166, 167, 168, 170
Lethal temperature, speckled trout, 399
Leucichthys artedi, 162, 183-184, 395
Leucosomus corporalis, 313, 317, 393-394
Leuctra decepta, 243-244
hamula, 243-244
sibleyi, 243-244
spp., 243, 245
tenuis, 243-244
Liberator for oxygen diffusion, 149-160
Ligula intestinalis, 165-166
Limnology, Maligne Lake, 223-224
Ling, age and growth, 77-79
migration, 394-395
parasites of, 170
Liquor cresolis compositus, 306
Little Manistee River, stocking results, 450-461
Lloyd-Smith, Wilton, (In Memoriam), 51
Lockwood, Charles A., 275-281
Lota lota maculosa, 77-79, 394-395
maculosa, 170
Louisiana State University, 138-142
Lucas, Clarence R., 138-142

M

Madawaska River, 236
Maine, University of, 138-142
Maligne Lake, 223-224, 224-225
River, 221-235
Management, angling resources, 18-20
brook trout waters, 232-234
use of rotenone, 80-86
Manuscripts, instructions for preparing, 512-515
Margariscus margarita nachtriebi, 164
Marine Biological Laboratory, 140
Maritrema medium, 168
obstipum, 168
Marketing associations, 188-192
of fishery products, 87-94, 188-192
Marking fish (see tagging fish)
Marked Tree Siphons, effect on fish, 469-474
Martin, William R., 77-79, 436-440
Maturity, age and size, croaker, 478-480
yellow perch, 120-121
Maryland, legislation, 29
University of, 138-142
Maskinonge, predators, 424
rearing in protected area, 421-429
Massachusetts State College, 138-142
Mayflies, 231, 314-333
McCloud River, salmon salvage, 55-69,
Measurement, hatchery fish, 275-281
Megaloptera
Corydalus, 317, 320
Medicine Bow National Forest, 140
Meetings, years and localities, 6-7
Megastomatibus sp., 384-387
Meigs, Robert C., 209-220
Members, classes of, 490-491
deceased, 51
in attendance, 15-16
list of, 494-511
number of, 21
M'Gonigle, R. H., 297-303; (disc.), 44
Michigan, University of, 138-142
Microphallidae, 167, 168, 170
Micropogon undulatus, 475-482
Micropterus dolomieu, 168-169, 172-179, 183-187, 195, 311-334, 352-353, 384, 387-390, 406-407
punctulatus, 184
salmoides, 335, 469-474
Midges, 321-322, 324-332
Migration, brook trout, 254
croaker, 478-480
salmon, Sacramento River, 58-63
shallow to deep lake, 391-396
steelhead trout, 61, 211-215
Migratory Bird Stamp Act, 29
Minnesota, University of, 138-142
Minnow, attractive, 313-315
blunt-nosed, 82-85, 166, 144, 313-317, 422
brassy, 166
mud, 82-85, 144, 423-424
rosy-faced, 313
straw-colored, 313
Minter Creek, 213
Minytrema melanops, 384-387
Missouri, legislation, 28
University of, 138-142
Mollusca
Ancylus, 321-322
Elliptio, 321-322
Gastropoda, 352
glochidia, 167
Musculium, 321-322
Nitocris, 317, 321-322
Sphaeriidae, 352
Sphaerium, 321-322
Montana, legislation, 28-29
University of, 138-142
Moore, Emmeline, (disc.), 303
Moronidae
Lepibema chrysops, 384, 387-390
Morone americana, 352-353
Mortality, brook trout, 371, 378
due to tagging, 463-465
effect of temperature, 68, 339-346, 400-403
ulcer disease, 371, 378
Moths, aquatic, 321-322
Mottley, C. McC., 414-420; (disc.), 42-43, 440
Moxostoma congestum, 360
Mud Creek, insect fauna, 236-248
Mugilidae
Mugil, 361
Mundt Pollution Bill, 37-38
Muriate of Potash, 336
Musculium, 321-322
Mylopharodon conocephalus, 61
Myriophyllum, 382
Mystacides spulchralis, 243
Myxosporidia, 162, 166, 170

N

Namakan, Lake, 484
Narragansett Marine Laboratory, 140
National Resources Committee, 38-39

Natrix sipedon, 423
Neascus ambloplitis, 164-169
sp., 164-165
vancleavei, 164-169
Nebraska, University of, 138-142
Needham, Paul R., 55-69
Nematoda
Agamonema sp., 164-168, 170
Capillaria sp., 166, 168
Contracaecum brachyurum, 168, 170
Dichelyne cotylophora, 166-167
Eustrongylides sp., 163
Haplonema hammulatum, 170
Hepaticola bakeri, 163, 170
Philometra sp., 170
Rhabdocona cascadilla, 164, 165
sp., 163, 166, 167, 170
Spiniectus carolini, 168, 169
gracilis, 162, 166, 170
Nemoura venosa, 243
Neoechinorhynchus cylindratus, 168
sp., 163, 164
Neureclipsis, 328-330
Neuroptera
Sialidae, 352
New Hampshire, University of, 138-142
New York State College of Forestry, 138-142
Conservation Department, 149-160
legislation, 28
Newaukum Creek, 214
Nitrocris, 321-322
Norris Reservoir
growing season of fish, 183-187
water temperatures, 186
North Carolina, University of, 138-142
North Creek, condition of brook trout, 287-288
condition of rainbow trout, 287-288
North Twin Lake, results of stocking, 461-463
Notemigonus crysoleucas, 165, 359, 470-471
crysoleucas auratus, 82-85, 144, 422
Notonecta, 360
Notropis amoenus, 313-315
cornutus, 165-166
heterodon, 422-423
h. heterolepis, 144, 165, 423
hudsonius, 313
lutrensis, 359
rubellus, 313
Noxious fish, removal, 80-86, 382-390
Nuphar advena, 363-368
Nyctiophylax vestitus, 243

O

Oceanography, education for, 129-136
Octobothrium sagittatum, 164
sp., 166
Octomacrum lanceatum, 163, 165
Octomiasis, 297-303
Octomitus salmonis, 271, 297-303, 444
Octospinifer macilentus, 163
Odonata, 317
Oecetis inconspicua, 243
Officers, list of, 3
reports of, 18-29
Ohio, legislation, 29
State University, 138-142
Oligochaeta, 352
Oncorhynchus kennerlyi, 234
nerka, 339-346
tschawytscha, 57-59
Opeongo Lake, 172-179, 401
growth of ling, 77-79
parasites of fish, 161-171
Order of business, 493
Oregon State College, 138-142
Osmeridae
Osmerus mordax, 233
Otolith, ling or lawyer, 77-79
Ottawa National Forest, 29
River, 236
Outdoor Writers' Association, 34
Ovalipes sapidus, 74
Oxyethira sp., 243
Oxygen, use in transporting trout, 149-160
Oyster culture and physiology, education for, 129-136

P

Palaemonetes, 359
Parasitic worms (see Acanthocephala, Cestoda, Nematoda, Trematoda)
Parnid beetles, 321, 322
Pathology, fish, education for, 129-136
Paul Lake, rainbow trout, 414-420
Pautzke, Clarence F., 209-220
Pelagic Sealing Treaty, 30
Penobscot River, 123
Perca flavescens, 82-85, 102-122, 144, 167-168, 195, 352-353, 387-390, 394, 422-424, 436-440.
Perch, white, 352-353
yellow, 144, 195, 352-353, 422-424
age and growth, 102-122
capture in seines, 385, 387-390
killed by rotenone, 82-85
migration, 394
parasites of, 167-168
statistics, Saginaw Bay
variations in food and growth, 436-440
Percidae
Perca flavescens, 82-85, 102-122, 144, 167-168, 195, 352-353, 387-390, 394, 422-424, 436-440.
Stizostedion vitreum, 384, 387-390, 407, 469-474
Perla, 317
Petromyzonidae
Entosphenus lamottenii, 82-85
Pfrille neogaea, 144, 164
Philometra sp., 170
Philopotamus, 321
distinctus, 243
Photography, fish scales, 98-101
Phyllodistomum staffordi, 166
Physico-chemical conditions
Maligne Lake, 223-224
Potter's Lake, 348-349
Pickerel, eastern, 352-353
Lake, results of stocking, 461-463
Pigeon River, results of stocking, 448-461
Pike, northern, 195
Sacramento, migration, 61
Pilchard, Pacific, 32
Pine River, results of stocking, 448-461
Pitt River, salmon salvage, 55-69
Pittman-Robertson Act, 29, 47
Plankton, Maligne Lake, 224-225
Plecoptera, 241-246, 320, 328-329
Acroneuria, 317
lycorias, 243
Alloperla imbecilla, 243
Hastoperla brevis, 243
Isoperla montana, 243
sp., 243, 245
truncata, 243

Leuctra decepta, 243-244
hamula, 243-244
sibleyi, 243-244
spp., 245
tenuis, 243-244
Nemoura venosa, 243
Perla, 317
Plectrocnemia cinerea, 243
Poeciliidae
Fundulus dispar, 359
Gambusia affinis, 359, 360
Poecilichthys exilis, 82-85, 144, 423-424
Pollution, Barkley Bill, 29, 37-38, 48
decline of Atlantic salmon, 123
deficiencies in laws, 39
Mundt Bill, 37-38
necessity for control, 19
Polycentropus confusus, 243, 245, 246
Polyphemus, 350-351
pediculus, 423, 425
Pomolobus pseudoharengus, 299
Pomoxis annularis, 183, 335-336, 360
nigro-maculatus, 195, 335-336
sparoides, 384, 387-390
sp., 469-474
Pomphorhynchus bulbocolli, 163, 165, 166
Ponds, control of spatterdock, 335-338
fertilization of, 335-338
planting brook trout, 412-413
Population, electrical study, 407
density, relation to size of fish, 172-179
Potamanthus, 315, 317, 320, 322, 326, 327
Potamogeton, 225, 382
amplifolius, 194-195
compressus, 194-195
Potash, muriate of, 336
Potassium permanganate, treatment, ulcer disease, 376
Potential food grade, 324-332
Potomac River, food of smallmouth bass, 311-334
Potter's Lake, use of rotenone, 347-355
Predators, in angling waters, 19
of maskinonge, 424
removal by poison, 80-86
by nets, 382-390
President, list of past, 6-7
opening address, 18-20
Preservation of fish, 72-76
Prévost, Gustave, 430-435
Prince Albert National Park, 140, 190-191
Processed fishery products, 190-191, 250-263
Productivity, lake trout, 394-395
Program policy for future meetings, 41-44
Progressive Fish-Culturist, 47
Propagation, artificial, brook trout, 410-413
egg count, 276-277
loss of weight by fish, 279
methods of stocking, 452-453
new method for trout, 430-435
planting legal trout, 446-468
rearing maskinonge, 421-429
steelhead trout, 217-218
weighing fish, 275-281
Prosopium quadrilaterale, 162
williamsoni, 233
Protection and legislation, report, 28-29
Protein catabolism, brook trout, 290
Proteocephalus ambloblitis, 166-169
fluviatilis, 168
laruei, 162
macrocephalus, 167
pearsei, 167
sp., 163
Protozoa
Bodo necator, 441
Ceratium hirundinella, 224
Costia necatrix, 441-445
Scyphidia, 443
Trichodina sp., 162
Provoking Lake, 172-179
Proulx Lake, parasites of fish, 161-171
Psephenus, 320, 322
Pseudochloeon carolina, 243
Psychomia diversa, 243
Psychomyiella flavida, 243
Ptychocheilus grandis, 61
Publications, Committee on, report, 34-36
Puerto Rico, fisheries, 95-97

Q

Qualifications, fishery biologists, 128-142
Quillback, removal, 384-387
Quinn, I. T., 28-29

R

Rain Lake, 172-179
parasites of fish, 161-171
Rainy Lake, 484
Ranatra sp., 423
Rate of flow, limits insects, 246
Rawson, Donald S., 221-235
Receipts, 23-24
Reclamation, Bureau of, 47, 56
Recovery, marked trout, 448-466
Refrigerated lockers, 260-263
Refrigeration of fish, 72
Report, Committees, 30-40, 44-50
Secretary-Treasurer, 21-25
Vice Presidents, 26-29
Reservoirs, as angling waters, 19-20
Resistance to ulcer disease, 377-379
Rhabdocona sp., 163, 166, 167, 170
cascadilla, 164, 165
Rhinichthys atratulus, 313-314
Rhode Island State College, 138-142
Rhyacophila carolina, 243
fuscula, 243
Ricker, William E., 382-390; (disc.), 346
River (see under proper name)
Roach, Lee S. (disc.), 467-468
Rochester, University of, 138-142
Rock Lake, 172-179
Ross, Lionel, 304-310
Rotatoria, 350-351
Rotenone, as fish poison, 80-86
effect on aquatic life, 350-354
method of application, 82-83, 143-144, 349-350
solubility of, 352
Rounsefell, George A., 123-127
Russell, Ralph, 188-192
Rushton, Wilfred (communication from), 49
Rutgers University, 138-142

S

Sacramento River, salmon salvage, 55-69
Saginaw Bay, growth of yellow perch, 102-122
statistics, yellow perch, 103-107
St. Croix River, 347
St. Francis River, effect of vacuum on fish, 469-474
Salmo (see under Salmonidae)

Salmon, Atlantic, cararrhal enteritis, 298-303
Atlantic, restoration in New England, 123-127
chinook, 57-69
fecundity, 63-65
loss in hatchery, 280
sex ratio, 63
king (see chinook)
land-locked Pacific, 234
loss in hatchery, 280
migration, 58-63
quinnat, 55-69
Sacramento River, 55-69
silver, loss in hatchery
sockeye, fisheries, 30
food utilization, mortality, 339-346
tyee (see chinook)
Trout River, marking experiments, 459
results of stocking, 249-259
Salmonidae
Cristivomer namaycush, 77, 82-85, 172-174, 393-396
Oncorhynchus kennerlyi, 234
nerka, 339-346
tschawytscha, 57-69
Salmo clarkii, 233
fario, 154-159, 290, 408
gairdnerii, 209-220, 233, 272-274, 290-296, 414-420
Gairdnerii irideus, 82-85, 408
irideus, 61, 264-271, 282-289, 446-468
salar, 123-127, 298-303
trutta, 61, 82-85, 233, 446-468
Salvelinus fontinalis, 82-85, 162-163, 221-235, 249-259, 267-270, 282-289, 290-296, 297-303, 304-310, 354, 369-373, 393-394, 397-403, 407-408, 410-413, 446-468
Salting of fish, 72
Salvelinus (see under Salmonidae)
Saprolegniaceae
Saprolegnia ferax, 264
invaderis, 264-271
parasitica, 264
Sardine, California, 32
Saskatchewan, University of, 138-142
Scale-body relationship, 108-110
Scales, maskinonge, number of circuli, 428
Scapholeberis mucronata, 357
Schneider, Phillip W., 272-274
Schoharie Creek, 406
Schuck, H. A., 304-310
Sciaenidae
Aplodinotus grunniens, 358, 469-474
Micropogon undulatus, 475-482
Scirpus, 382
Scripps Institution of Oceanography, 140
Scyphidia, 443
Securities, list of, 24-25
Seines, removal of rough fish, 382-390
Semotilus atromaculatus, 82-85, 164
Sex ratio, chinook salmon, 63-65
croaker, 478-479
yellow perch, 120-121
Sexual development, croaker, 475-482
Shad, gizzard, 195
effect of vacuum, 469-474
migration, Sacramento River, 61
Shasta Dam, salmon salvage, 55-69
Shenandoah River, food of smallmouth bass, 311-334
Sheepshead, 358
effect of vacuum, 469-474
Shetter, David S., 446-468; (disc.), 259
Shiner, black-chinned, 422-423
black-nosed, 144, 423
parasites of, 165
golden, 144, 422
effect of vacuum, 470-471
killed by rotenone, 82-85
parasites of, 165
northern common, parasites of, 165-166
Sialidae, 352
Significance, test of, 417-420
Silversides, brook, 198
Simocephalus, 327-329
Simulium, 321-322
Siphlonurus alternatus, 243
Siphons, effect on fish, 469-474
Skagit River, 215
Slag, basic, 336
Smelt, 233
Smith, Andrew B., 275-281
Smith, E. V., 335-338, 363-368
Smith, Lloyd L., Jr., 249-259
Smith, M. W., 347-355
Smith, Osgood R., 55-69
Smoke Lake, 172-179
parasites of fish, 161-171
Snake, water, 423
Snoqualmie River, 215
Sodium nitrate, 365
Soos Creek, 213
South Twin Lake, stocking results, 461-463
Sphaeriidae, 352
Sphaerium, 321-322
Spatterdock, control in ponds, 363-368
Spinitectus carolini, 168, 169
gracilis, 162, 166, 170
Spirogyra, 359
Sponson bugs, 315, 324-325
Sprules, William M., 236-248
Standard Lake, growth of rock bass, 143-148
Stanford University, 138-142
Stansby, Maurice E., 260-263
Staurastrum, 350
Steelhead trout, age at maturity, 217
Stenonema canadense, 243, 245
fuscum, 243
rubromaculatum, 243
vicarium, 243
Stenophylax guttifer, 243, 345, 346
Stephanodiscus niagarae, 224
Sternotherus odoratus, 205, 423-424
Stickleback, brook, 82-85
Stizostedion vitreum, 384, 387-390, 407, 469-474
Starvation, relation to temperature, 295
Stobie, Robert H., (In Memoriam), 51
Stocking, brook trout, 225, 410-413
legal trout, 446-468
steelhead trout, 212
use of oxygen in transporting, 149-160
Stone, Franz Theodore, Laboratory, 140
Stoneflies, 317, 320
Sucker, black, removal, 384-387
common, 144, 352-354, 422-424
killed by rotenone, 82-85
migration, 393-394
parasites of, 163
removal, 384-387
migration, 61
northern, parasites of, 163
Sunfish, common, 147, 352-353, 422-424
capture in seines, 385, 387-390
killed by rotenone, 82-85
migration, 394
parasites of, 169-170
Superior, Lake, 249
Superphosphate, 336, 365
Surber, Eugene W., 311-334

Survival, hatchery fish, 255-257
planted brook trout, 407
planted legal trout, 446-468
relation to temperature, 399
Susceptibility to ulcer disease, 373-374
Swingle, H. S., 335-338, 363-368

T

Tabanus sp., 182
Table Mountain Dam, 69
Tadpoles, 326-327
Tagging fish, Atlantic salmon, 126
brook trout, 253-258, 408, 446-468
brown trout, 446-468
croaker, 478-480
method, 211, 253
mortality, 463-465
rainbow trout, 446-468
steelhead trout, 211-215
Tanks, hatchery, new circular, 430-435
Tapeworm, human, 483 (see also Cestoda)
Tanamakoon Lake, 174-179
Technology, relation to fisheries, 72-76
Temperature, decline of Atlantic salmon, 123
effect on rainbow trout, 290-296
effect on sockeye salmon, 339-346
relation to growing season, 185-187
relation to loss in weight, 294-295
relation to mortality, 68, 400-403
relation to survival, 399
relation to ulcer disease, 376-377
seasonal fluctuations, 392-393
Tempering speckled trout, 397-403
Tennessee, legislation, 28-29
University of, 138-142
Tester, Albert L., 98-101
Testudinata
Chelydra serpentina, 205, 423-424
Chrysemys bellii marginata, 205
marginata, 423-424
Emys blandingi, 423-424
Graptemys geographica, 205
Sternotherus odoratus, 205, 423-424
Tetracotyle sp., 163, 165, 166, 170
Texas, A. and M. College of, 138-142
Thermocline, relation to rotenone, 82
Toner, G. C., (disc.), 355
Toronto, University of, 138-142
Transmission, ulcer disease, 374-376
Trautman, Milton B., 193-208
Trematoda
Allocreadium ictaluri, 166
lobatum, 164
Alloglossidium corti, 166
geminus, 166
Azygia angusticauda, 167, 168, 170
longa, 167
Bucephalus elegans, 167
Bunodera sacculata, 167, 170
Clinostomum marginatum, 163-169
Crepidostomum cooperi, 162, 167, 169
cornutum, 166, 168, 170
faronis, 162
ictaluri, 166
Gyrodactylidae, 163-169
Maritrema medium, 169
obstipum, 168
Microphallidae, 167, 168, 170
Neascus ambloplitis, 164, 169
sp., 164-165
vancleavei, 164-169
Octomacrum lanceatum, 163, 165
Phyllodistomum staffordi, 166
Tetracotyle sp., 163, 165-166, 170
Triganodistomum simeri, 163
sp., 163, 164, 168
Vietosoma parrum, 166
Triaenophorus robustus, 483-484
Trichodina sp., 162
Trichoptera, 241-246, 317, 352
Agapetus sp., 243
Athripsodes angustus, 243
dilutus, 243
Brachycentrus, 321, 330
Cheumatopsyche pettiti, 243
Chimarrha aterrima, 243, 245
Goera stylata, 243
Hydropsyche, 321-322
betteni, 243
sparna, 243
Lepidostoma sp., 243
Mystacides sepulchralis, 243
Neureclipsis, 328-330
Nyctiophylax vestitus, 243
Oecetis inconspicua, 243
Oxyethira sp., 243
Philopotamus, 321
distinctus, 243
Plectrocnemia cinerea, 243
Polycentropus confusus, 243, 245, 246
Psychomyia diversa, 243
flavida, 243
Rhyacophila carolina, 243
fuscula, 243
Stenophylax guttifer, 243, 245, 246
Tricorythus, 320, 322
Triganodistomum simeri, 163
sp., 163, 164, 168
Triggs, Charles W., 70-71
Transportation, use of oxygen, 149-160
Trepobates, 330
Trout, brook, 354, 408
creel census, 251-258
effect of cresol, 304-310
electrical census method, 407
feeding habits, 230-231
fungus disease, 267-270
growth, 225, 230
killed by rotenone, 82-85
loss in hatchery, 280
maligne River System, 221-235
migration, 254
planted diseased fish, 372-373
private waters, 410-413
protein catabolism, 290
resistance to ulcer disease, 377-379
results of stocking, 249-259, 446-468
ulcer disease, 369-373
yield per acre, 411-413
brown, 233
electrical census method, 408
killed by rotenone, 82-85
loss in weight, 290
migration, 61
oxygen consumption, 154-159
results of planting, 446-468
transportation, 149-160
ulcer disease, 373-374
cutthroat, 233
loss in hatchery, 280
effects of beaver dam, 237
lake, 77
killed by rotenone, 82-85
migration, 393-396
productivity, 395-396
relation of size to density, 172-174
Lake Laboratory, 140
Loch Leven, loss in hatchery, 280
new circular hatchery tanks, 430-435

rainbow, 233
effect of fasting, 290-296
electrical census method, 408
fungus disease, 264-271
killed by rotenone, 82-85
length conversions, 283-284
loss in hatchery, 280
private waters, 412
results of planting, 446-468
size and condition, 414-420
ulcer disease, 373-374
speckled, catarrhal enteritis, 297-303
migration, 393-394
parasites of, 162-163
private waters, 410-413
tempering versus acclimation, 397-403
steelhead, 61, 126
ether anesthesia, 272-274
life history, 209-220
loss in hatchery, 280
migration, 61
Tullibee, 484
Turtle, Blanding's, 423-424
map, 205
musk, 205, 423-424
painted, 205, 423-424
snapping, 205, 423-424

U

Ulcer disease, identical with fin rot, 379-380
in native fish, 373
permanganate treatment, 376
survival of brook trout, 407
trout, 369-381
Umbridae
Umbra limi, 82-85, 144, 423
Underhill, A. H., (disc.), 127
U. S. National Museum, 141
Utah State Agricultural College, 138-142
University of, 138-142
Utilization of food, 339-346

V

Vacuum, effects on fish, 469-474
Ballisneria spiralis, 194
Van Oosten, John, 34-36
Vice President
Fish culture, report, 26-28
Protection and legislation, report, 28-29
Vietosoma parvum, 166
Virginia, University of, 138-142
Vitamins, in diet of brook trout, 369-371
Vladykov, V. D., (disc.), 440, 467-468

W

Wallace, David H., 475-482
Wall-eyed pike, 34
capture in seines, 384, 387-390
effect of vacuum, 469-474
removal by electricity, 407
Washington, University of, 138-142
Water level, effect on fisheries, 193-208
quality standards, 38-39
willow, 313
Webb, Glaucus, 272-274
Weeds, control in ponds, 363-368
Weighing hatchery fish, 275-281
Weight, computation of loss, 293
loss, brown trout, 290
hatchery fish, 279
yearling rainbow trout, 417
Werner, W. R. H., (disc.), 303
West Virginia, University of, 138-142
Whirling sickness, treatment, 300-302
Whitefish, migration, 393-395
Lake, 172-179
lake, artificial feeding, 180-182
parasites of, 162
Menominee, parasites of, 162
Rocky Mountain, 233
White Lake, fish migration, 391-396
Whitmore Lake, fluctuations of fish, 193-208
Widner, John E., (In Memoriam), 51
Wisconsin, University of, 138-142
Wiscoy Creek, 408
Wolf, Louis E., 369-381
Woods Hole Oceanographic Institution, 140
Woody Island Wildlife Refuge, 29
Worms, parasitic (see Acanthocephala, Cestoda, Nematoda, Trematoda)
Wright, A. H., (disc), 34, 42
Wright Lake, 172-179
Wyoming, University of, 138-142

Y

Yale University, 138-142
Sears Foundation, 33
Yellowstone National Park, 29
Yield per acre, brook trout, 411-413

Z

Zilliox, Robert G., 404-409
Zoology, courses for fishery biologists, 130-136
Zygoptera, 320, 352